South Fork Kings Groundwater Sustainability Agency

May 23 2019 Board Workshop

Lemoore, CA May 23, 2019 Geosyntec consultants



Financing Issues



How does GSA manage costs?

- Assessment (\$/acre, \$/AF)
 - SFKGSA vs Tulare Subbasin
 - Tied to overdraft and sustainable yield
- Other mechanisms
 - Water market/bank
 - Tied to overdraft and sustainable yield

What costs are financed by what mechanism

- Agency admin
- GSA Implementation
- Projects





Cost (per year)		
Agency Adminstrative Costs		
GSP Implementation Ongoing Costs		
GSP Monitoring and Metering Capital Costs (5-yr payback)		
GSP Projects and Management Actions OPEX		
GSP Projects and Management Actions (Total Capital Costs/50)		
GRAND TOTAL		

- 1. Agency Admin
 - Basic operations
- 2. GSP Implementation
 - Annual/5-Yr Activities
- 3. GSP Initial CAPEX
 - Meters/Monitor Wells
- 4. GSP Projects
 - Demand/Supply
 - CAPEX/OPEX



Buckets 1-3.....

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Cost (ner vez	
Cost (per yea	
Agency Adminstrative Costs	\$373,500
GSP Implementation Ongoing Costs	\$222,500
GSP Monitoring and Metering Capital Costs (5-yr payback)	\$950,000
GSP Projects and Management Actions OPEX	
GSP Projects and Management Actions (Total Capital Costs/50)	
GRAND TOTAL	

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Approximate per Acre cost \$12/Acre for Admin/GSP

> \$3 Acre for Monitoring Program \$15/ Acre



Buckets 1-3.....

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Approximate per AF pumped cost \$7.50/AF pumped for Admin/GSP \$2.50/AF for Monitoring Program \$10/AF



Published SWRCB Base Fees

The draft fee schedule ties the fees to the type of Board activity occurring in the basin, as follows:

Fee Category	Applicable Parties – Reporting Extractors	Fee Amount	
Base Filing Fee ^(a)	Any extractor submitting an extraction report	\$100 per well	
	Fees based on intervention status ^(a)		
1. Unmanaged Area Rate	Extractors in an unmanaged area	\$10 per acre-foot per year, if metered	
	Extractors in an unmanaged area.	\$25 per acre-foot per year, if unmetered	
2. Probationary Basin Rate	Extractors in a probationary basin.	\$40 per acre-foot per year	
3. Interim Plan Rate	Extractors in a probationary basin after the time period identified by § 10735.4 or § 10735.6 (180 days or one year, accordingly).	\$55 per acre-foot per year	
Fees independent of intervention status ^(b)			
Late Fee	Extractors that do not file reports by the due date.	25% of total fee amount, accrued monthly	
May apply to extractors when basin-specific special studies are required and the probationary or interim plan rates are insufficient. The additional cost of developing special technical studies such as groundwater investigations or modeling will be apportioned to extractors based on volume of water extracted.			

(a) Can apply to de minimis extractors in probationary basins at the Board's discretion.

(b) These fees are paid in addition to the "Fees based on intervention status."





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Projects Cost Model

- Geosyntec Consultants
- Estimates total cost to develop combination of
 - Supply enhancement (ASR + MAR); and
 - Demand reduction (seasonal fallowing + land retirement + SW delivery improvements)
- Evaluates multiple combinations of supply enhancement and demand reduction actions to capture total and relative costs of each element
 - More demand reduction means less supply enhancement
 - More land retirement means less fallowing
 - More surface recharge means less ASR



Relative Cost Classification for Actions

	ITEM	Capital Cost (CAPEX)	Annualized Operating cost (OPEX)
	SW Delivery Improvement	Mod	Very Low
	On-Farm Improvements and Conservation	Low	Low
DEM	Land Retirement or Long-Term Fallowing Contract	High	Very Low
	Seasonal Cropping and Fallowing Program	Very Low	High
PLY	Mid-Kings Recharge	High	Mod
SUP ENH#	SFKGSA ASR	Mod	High



Potential Annualized Cost of Projects

	Hlgh	Mod	Low
Total Annualized Cost (per yr)	\$6.5-7.1 M	\$4.8-5.3M	\$3.8-4.4M
Cost per Acre-Foot (per yr)	\$65-71	\$48-53	\$38-44
Cost per Acre (per yr)	\$100-120	\$80-90	\$60-70

Project Costs only (agency/GSP costs are an additional \$15/Acre or \$10 \$/AF) Does not include cost of financing Does not include macroeconomic impact (jobs, tax base, revenue)

Assumes "full cost" for fallowing and land retirement Planning-level cost for ASR wells and recharge



Potential Role of Water Markets in Executing GSP Projects





- Leverage private capital and market forces to reduce assessment
- Fee schedule with incentives and penalties to encourage participation
- GSA controls water savings from public investment
- Landowners control water savings from private investment
- Define baseline landowner goals to reduce overdraft



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 Groundwater banks redistribute the authority to withdraw groundwater from sellers to buyers







A water bank can help achieve sustainable yield and then maintain the resulting yield and value if.....

- If there is a financial incentive to do so
 - Financial benefit or avoided cost (now or in the future)
- If there is a time incentive to do so
 - Pay less/get more now, vs pay more/get less later
- If an aquifer credit is required as part of transactions
 The aquifer needs to be part of the "win"
- If it avoids more stringent regulation in the future





- Public entity, private entity or quasi-governmental NGO
- The banker needs to have ability, trust, and authority to enforce the rules of the bank, certify transactions, maintain the accounting system, and report/verify results
- "Transaction fees" include
 - Financial compensation to the banker
 - Overdraft mitigation to the aquifer



Individuals can market water if they exceed their goal:





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Individuals can receive water if they need help reaching their goal:





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Increasing Rate Schedule





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Increasing Rate Schedule



2040 GSA revenue= \$\$7.2M/yr





Increasing Rate Schedule



2040 GSA revenue= \$\$7.2M/yr









- \$15/acre minimum fee
- 10% fee reduction for each 10% of private water savings
- Savings beyond baseline goal marketed to others on open market



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- Landowner pays \$15/acre in 2020
- Landowner goal is 40% reduction in baseline
- Landowner baseline fee in 2025 would be \$40/acre
 - Landowner conserves or stores 20% in water savings, conveys to GSA
 - Baseline fee in 2025 reduced by 50% = \$20/acre





• By 2030 landowner saves 40% in water use

– Baseline fee = \$15/acre instead of \$55/acre

• By 2035, water savings = 50%

- Landowner markets 10% savings to others on open market

